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ABSTRACT

Urban Geography was selected as the discipline for studying the physical structure of a city, as reported in ED 066 350. This second progress report presents a resume of the activities of the team and reflects upon the processes involved in curriculum building and instructional planning: 1) clarifying the nature of students involved, 2) finding effective materials, 3) determining appropriate teaching methods, and 4) choosing the evaluation instruments needed. It is emphasized that learning levels and processes of students be considered in developing materials; any materials should be available throughout Canada at little or no cost; students should be involved; field experiences offer the best learning base and audiovisual materials must be provided when direct experience is not feasible. Materials being developed are in sections, built upon one another, yet usable individually. Section I, The City and Region, and Section II, The City As a Structural Unit, are intended to provide the conceptual base and skills necessary for the systematic study of factors affecting the growth of a city, which will be presented in Section III. A teacher's guide, audiovisual materials, and student resource booklets are described. Refinement of the first two sections and solidification of Section II will receive the greatest amount of attention this coming year. (JMB)

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THE FACTORS AFFECTING THE STRUCTURAL GROWTH OF A CITY

Western Curriculum Project on Canada Studies

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Factors Affecting the Growth of a City

(A Project Canada West sub-project)

Second Annual Report
July 1972
Environmental Analysis
Study Group
Saskatoon, Saskatchewan.

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I Introduction

This Project Canada West sub-project is now entering its third year of a five year program. The purpose of this document is to present a resumé of the activities of this team in developing a curriculum on urban studies and to reflect upon the processes involved in curriculum building and instructional planning as seen through the practical experiences of team members.

II Origin of the Sub-project Team - 1970-71

Due to a common interest in the teaching of aspects of urbanization, several interested teachers formed the core of this team early in 1970. Following the guidelines of Project Canada West, a topic dealing with the factors affecting the physical structure of a city was selected, submitted and accepted as of June 1970. Despite several changes and additions in personnel, three of the original group still are attached to the sub-project, Jim Tooke, Bill Delainey and Brian Noonan. The present team consists of; Jim Tooke (team leader), Aden Bowman Collegiate; Bill Delainey, Evan Hardy Collegiate; Brian Noonan, Bishop Murray Separate Elementary School; Eleanor Campbell, Grosvenor Park Public Elementary School; Ken Loewen, Churchill Public Elementary School; Eleanor Miller, Vincent Massey Public Elementary School.

During the 1970-71 school year the team applied itself to a research function by investigating all areas of knowledge relevant to the growth of the physical structure of a city. The major problem facing team members was the crystallization of the knowledge, skills, and attitudes which would form the intended learnings of the program. Through the use of university and community personnel a catalogue of generalizations was articulated.¹ These generalizations formed the substantive network for the conceptual

¹ See page 39 First Annual Report, Factors Affecting the Growth of a City, June, 1971.

design for the factors which affect the growth of a city.² In the main, the teacher-developers attempted to include generalizations from many disciplines associated with the study of urban life. Ultimately, however, it became necessary to select only one discipline which would integrate and synthesize as much as possible the understandings from various disciplines. This led to the team selecting the study of urban geography as the disciplinary source of the curriculum. The generalizations were examined and validated by university and community personnel who were experts in urban studies.

A major problem facing the team at that time was the necessity to reorganize the generalizations into a workable form that could be translated into intended learning outcomes. The problem of re-selecting and re-organizing these generalizations has been one of continuing concern for the team for the first two years.

III A Process of Curriculum Development and Instructional Planning, 1971-72

Whereas, Year One was a period of researching; 1971-72 was a period involving curriculum development and instructional planning. During the second year the development team worked to further crystallize the intended learning outcomes of the curriculum. In addition to maintaining content validity by focussing on urban geography, the team introduced a new input - the classroom, its students, resources and teachers. The problem then facing the team was to organize the intended learnings for instruction and, at the same time, recognize the structural and hierarchical relationships existing within the study of urban geography. This involved a clarification of

- (1) the nature of the students involved in the learning,
- (2) the kind of materials which would facilitate this learning,
- (3) the types of teaching methods which would be most appropriate,

² Ibid., page 5

(4) the kinds of evaluation instruments to be used.

Answers to these questions were obtained (in part) by actual classroom experiments.

Team members and other selected teachers experimented with means of achieving learning outcomes by using various teaching strategies and instructional resources.

The purpose of these classroom activities was to provide information on the interaction of the students, teaching methods and resources with a view to reorganizing the original statement of generalizations.

It has become obvious that practical field experiences offer the best learning situations for students. By viewing the community as a large scale laboratory opportunities become available for exciting and varied interactions between students and environment. This interaction can best take place through field trips and other practical experiences. However, since this kind of learning situation does not always exist the team has recognized the need to provide audio-visual materials which can fulfill this function. As a result, some team members have produced resource materials which can be used to provide background information for students and teachers. Classroom experimentation has revealed the need for structured and organized materials which facilitate the acquisition of knowledge and skills. The importance of developing research skills as well as understanding terminology cannot be underestimated. As a result of classroom experiments the team believes students must:

- (a) learn the fundamental concepts related to physical structure of a city,
- (b) learn research and organization skills,
- (c) be provided with the opportunity for individual investigation.

A representative list of some investigation carried out by students were:

- (1) A student produced video-tape showing impressions of a city as seen by Grade 7/8 students.

- (2) A slide-tape presentation dealing with the urban fringe area.
- (3) A land use study by grade 5/6 students.
- (4) A student directed investigation into the geological implications of certain city structures.
- (5) Explorations into the history of their city by various age groups.
- (6) Examination of problems facing the city in the areas of housing, city planning, taxation, etc.

Following this period of limited classroom implementation the sub-project came to recognize several major forces active in the organization of curriculum content (or intended learning outcomes). In addition to recognizing content validity curriculum planners must especially consider:

(A) principles of learning and student characteristics.

Teachers and curriculum developers must be aware of the psychological nature of the intended learners. The age, grade, interest and achievement levels of the student will affect the organization of the intended learning outcomes. A major purpose of subsequent investigations will be to determine the best way learnings should be organized for various grades. Although it is probable that any concept can be learned by any student the team believes there is probably a "best time" in a student's school life to acquire particular learnings.

The team is also investigating the extent to which students may plan and organize their own learning experiences. Experiments during 1971-72 with student produced materials suggest that students' abilities and interests lead to very valuable and interesting products.

(B) the role of instructional resources.

This sub-project team has come to believe that the development of teaching materials and strategies is a necessary compliment to the development of intended learning outcomes. As a result much energy has been directed toward insuring that instructional materials are available to teachers who will ultimately implement Project Canada West ideas. At the same time, however, the team realizes that instructional resources are a tool only and must reflect the needs and interests of students, teachers and community. The primary concerns in developing materials have been the following:

- (1) availability - resource materials should be accessible in any Canadian community at little or no cost.
- (2) student oriented - not only should materials be useful and meaningful to learners but students should be involved at all levels of planning and producing materials for themselves and others.

(A further explanation as to the specific nature of materials produced during 1971-72 may be found elsewhere in this report.)

A General Perspective

Entering the third year of development this Project Canada West sub-project has begun to articulate a general design for curriculum development and instructional planning. The team sees this process to be one of continuing selection and organization of intended learnings. Each phase may be viewed as a cycle which involves increasingly refined determination of intended learning outcomes. This would seem to demand an expertise in subject area (urban geography), teaching practice, and forms of evaluation. The ultimate product of this cyclical process will be clearly stated intended learning outcomes with accompanying resources and teaching strategies which teachers may use to varying degrees. A major problem facing the team after two years is the need to

narrow down the list of anticipated outcomes without losing the substance of the curriculum. The general design for the process perceived by the team is described below.

Year One - Phase one was a research period in which a large pool of curriculum items was isolated. These items were evaluated by university and community experts in urban studies as well as by team members.

Year Two - A development phase wherein intended learnings were further refined from the original item pool. Since other practices (classroom experimentation) were available, evaluation included inputs from, teachers, students and evaluation experts from other areas (ie. University).

Year Three - perceived as a further development year wherein intended learnings become further refined and related materials better produced.

Problems

Because of the ever-widening circle of involvement the main problem facing this development team is one of coordination and administration. Another major problem is the breadth of scope (Grades 5 - 12) that the team hopes to include. It is felt though that practical classroom research will best serve to decide at what level what learnings can best be planned.

On a larger level, however, communications is the main problem. If this type of curriculum development is to succeed, the intelligent support of all levels of administration is necessary. To further communications the sub-project team sponsored a display night where students, teachers and school administrators viewed the results of classroom experiences with ideas from Project Canada West. The team expects this type of forum to become common practice with a view to publicizing Project Canada

West, offering students opportunities to display their products and encouraging positive responses from teachers and other school officials. In addition, this Project Canada West team faces practical problems of release time and school level cooperation which will be necessary for development in coming years.

The Future:

During the 1972-73 term the team intends to make a final selection of intended learnings to be included in the unit and to establish behavioral objectives based on these Intended Learning Outcomes. The greatest amount of time and energy will then be given to the further development of materials and teaching strategies. Each item and strategy prepared will be tried and evaluated by team members in their own classrooms. The strategies and materials will then be organized into sections and finally a complete unit of study for actual field testing. From this point a formal evaluation program will be instituted with assistance from outside professional consultants. Evaluation procedures will be pursued on two fronts. First, the materials and the strategies themselves will be evaluated by other classroom teachers and outside personnel. Secondly, a procedure for measuring student achievement will be devised. Here it is hoped to provide for pretest and post-test evaluation in classroom situations.

Over-all the coming year will see a crystallization of all aspects of the project to the point where large scale field testing will be planned for 1973-74.

IV Program and Materials

As stated before, the team's experience during the last school term has shown that the level of student interest and motivation is highest when students are involved in planning and executing their own projects. However, it became evident that students required a knowledge base and research skills before being able to adequately complete

studies of the urban structure and reasons for its being the way it is. In light of this fact and the realization that few teachers would be familiar with the concepts or have the time to prepare their own materials, the team decided to prepare a set of materials (using Saskatoon as a case study) which supply this knowledge base and research skills. Then research topics and follow up activities will be provided which can be pursued by a class or on an individual basis in their own urban setting.

The materials produced will be focused on the inquiry approach to better provide for the development of research skills. They will generally be of single concept nature to allow for integration of the concept and application to the community. The concepts, skills and related materials will be organized into sections which will build on one another yet can be selected individually to suit the academic level and interest of the students as well as the time and desire of the teacher.

A teacher's guide will be prepared which will briefly explain the educational objectives of each activity, specific tested strategies, the materials to be used and evaluation procedures. It will also include the suggested follow up activities as well as required background information and a bibliography of teacher and student references for each section.

Filmstrips, slide sets, single concept films, transparencies, video and audio-tapes and picture and map sets will be provided in the kit for instructional purposes. As well, a set of student resource booklets containing mainly primary data (ie. pictures, newspaper articles, statistics etc.) for integral use in the prescribed activities will be prepared.

A tentative outline for the unit has been drawn up to provide guidelines for further classroom experimentation next term. Some materials deemed necessary to facilitate teaching strategies tried last fall have been developed and will receive their

initial testing in classrooms this fall. These will be available for examination during the August meeting at Banff.

Briefly Section I, The City and the Region establishes the interdependence of the city and the region by a progression of oblique air photos from a farmstead, a small town and a series of slides on the city. The effect of regional function on the structural character of a city is also made apparent by the slide series while the difference between basic and non-basic economic functions will be provided by an elementary statistical analysis. An optional activity to show how each city is part of an integrated urban network will also be included.

Provision is then made for the further investigation of urban hierarchies, Central Place Theory and evaluation of the "economic health" of selected communities by more advanced students or classes.

Section II, The City as a Structural Unit introduces the structural composition and patterns of the built up area and their relationship to land values, age and access. This will be done by means of an aerial transect shown on a single concept film. The nature of the "urban fringe" and its implications on the surrounding area and future growth of the city are illustrated using filmstrips as visual field trips. Further studies of land speculation, taxation policies and esthetics can be pursued from this point if desired.

Next the nature of land use types within a built up area, the reasons for their existence and desirable and undesirable characteristics will be examined by means of transparencies based on a "house" analogy. From this an introductory analysis of the general land use organization of Saskatoon will be initiated using a number of specialized maps, air photos and newspaper articles.

In order to complete the above activities students will have to interpret air photos, make observations from visual field trips, gather and record data, organize their information to make generalizations and arrive at conclusions and derive implications. They will also have to learn how to correlate information from a number of primary sources including maps, statistics and newspaper articles.

Sections I and II are intended to provide the conceptual base and skills necessary for the systematic study of factors affecting the growth of a city included in Section III. It is expected that these will be used at lower grade levels and in classes where a pre-test indicates that the students are not adequately prepared for the next section. However more classroom trials are necessary before any concrete decisions can be made on a breakdown of concepts or sections by levels.

Section III will concentrate on the systematic study of the factors affecting the physical organization of a city.³ The complex nature of the interaction of the conditions affecting the growth of a city, which make it impossible to isolate instances where only one factor is operational, necessitate a breakdown of the subject for analysis. The present plan is to breakdown this portion of the study by land use types.

The team plans to continue the inquiry approach, based on a wide variety of audio-visual materials begun in Sections I and II.

A tentative outline of Section III has also been drafted and a considerable number of materials including maps, pictures, slides, news clippings, and taped interviews have been collected which will form the resource base for the planned activities.

A number of possible strategies are also being considered for this Section, but

³ These factors were elaborated upon in First Annual Report, The Factors Affecting the Structural Growth of a City, June, 1971.

they, like the outline of concepts have not been brought to the point where they can be satisfactorily included in this report. The refinement of the first two sections and the solidification of Section III will receive the greatest amount of attention during classroom experimentation and team meetings this coming year.

Two major considerations that are being kept in mind during the preparation of this program are that the concepts chosen are applicable anywhere in Canada and that similar materials are available in any Canadian urban centre.

V Outside Resources and Supporting Agencies

The assistance given to this sub-project of Project Canada West can be arranged into five categories. These are: the development of curriculum theory and research, the collection of information and materials, the production of materials, the evaluation of processes and products, and financial assistance in cash and services.

In the development of curriculum theory and research, this group required the services of a number of consultants who have a high degree of expertise in a wide variety of disciplines and areas of specialization. The consultants were recruited from two sources. One source was the faculty of the University of Saskatchewan and the other was the administrative staff and Aldermen of the City of Saskatoon. These services were required to ensure the validity of our intended learning outcomes from the point of view of each discipline and specialty area. The consultants engaged are listed below:

A. University of Saskatchewan faculty

Harry Dhand, Ed. D.
Richard Laskin, Ph. D.
Zenon S. Pohorecky, Ph. D.

Professor College of Education
Associate Professor of Sociology
Professor of Anthropology

Ronald Rees, B.A. M.A.	Assistant Professor of Geography
Leslie Richards, B.A. (Hons), M.Ed.	Assistant Professor of Curriculum Studies
Jack Stabler, Ph. D.	Associate Professor of Economics
Norman Ward, Ph. D.	Britnell Professor of Political Economics

B. Administrative Staff and Aldermen of the City of Saskatoon

G.J.D. Taylor, Q C	Alderman for the City of Saskatoon
J.B. Wedge, Q C	Alderman for the City of Saskatoon
H. E. Wellman, M.T.P.I.C., B.A. (Hons)	Director of Planning and Development for the City of Saskatoon

The major activity carried out by this sub-project group during phase two was the collection of information and materials. This process involved the services of many persons with a wide variety of interests from various backgrounds. Some of the materials gathered were micro-film copies of newspapers, maps of all kinds from the city engineers department, statistics and maps from the city assessor's office, newspaper clippings and xeroxed material from the Saskatoon Public Library, and photographs from a number of sources. The following list is included to serve as a guide to indicate the sources that were used.

Students from University of Saskatchewan - gathered materials and information

City of Saskatoon Staff:

Mr. J.A. Beveridge	Director of Works and Utilities
Mr. A.F.G. Carroll	City Engineer
Mr. R. Cope	City Planning Officer
Mr. J.A. Macnab	City Assessor
Mr. G. Tweddell	Junior Planner
Mr. H.E. Wellman	Director of Planning and Development
Mr. W. Ziolkoski	Parks and Recreation Department

Staff - Saskatoon Public Library

Mr. W. Lepp - Local History Room Public Library

Mr. T.R. Alexander, Superintendent Canadian Pacific Railway

Alderman D. Koyl, Koyl Agencies Ltd. Real Estate

University of Saskatchewan Archives

Creative Professional Photographers

During phase two the sub-project team members and students associated with the project began the production of materials to be used in the curriculum. The group stressed that materials used should be produced locally where possible. The students and team members did a substantial amount of photography, video-taping and audio-taping. They also began to experiment with the production of film strips and Super 8 mm film-loops. The sources listed below are located in Saskatoon, but it is highly probable that these suppliers and services may be found in any other major center or could be made available with only a minimum of delay through mail order.

Johnsons Photo

- develop and print Ektachrome for slides or strips
- other photographic services except developing and printing Kodachrome.

Saskatoon Board of Education (Resource Center) Mr. B. Anderson

- Ektagraph - to produce slides of flat materials
- video-tape service
- slide filmmaker
- transparency production

Saskatoon Separate School (Resource Center) Mr. M. Hepp

- video-tape service - editing
- Super 8 mm. Cassette service
- video-tape recording

Mitchinson's Flying Service Ltd.

- air photo service

Rays Flying Service Ltd.

- air photo service

The evaluation of processes and products will be carried out during phase three and phase four and are at present only in the developmental stage. It is the intention of this sub-group to encourage local teachers and students to take an active part in

this evaluation. However, the major over-all evaluation will be developed and carried out under the guidance of Dr. Ron Carswell, who has been in contact with this team in this regard.

The major portion of the services were supplied by the Saskatchewan Teachers' Federation. Since this team is composed of members from two different school systems and four different schools the problem of a meeting place became serious. However, the Saskatchewan Teachers' Federation has generously provided office space for the team. It has also provided the team with photographic, printing, xeroxing and secretarial services along with research, consultant, and technical assistance. Mr. Ruben Richert, B. Ed., Executive Assistant and Dr. A.G. McBeath, Ed. D., formerly Executive Assistant have given very generously of their time and advice to assist the team in its work.

The Saskatoon Board of Education has provided release time for team members to attend Project Canada West workshops. The Saskatoon Roman Catholic Separate School Board has provided release time on a regular basis for one of the team members. The University of Saskatchewan has provided the sub-project with the services of Dr. Dhand and Mr. Les Richards who are advisors to the project.